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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 4

### Complete If Known

Application Number	10/665,900
Filing Date	September 19, 2003
First Named Inventor	Fréchet, Jean M.J., et. al.
Art Unit	1743
Examiner Name	Not yet assigned
Attorney Docket Number	IB-1829

U.S. PATENT DOCUMENTS					
Examiner	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code <sup>2</sup> (if known)			
/JN/	AA	US-5316,680	05-31-1994	Fréchet, et al.	
	AB	US-5,334,310	08-02-1994	Fréchet, et al.	
	AC	US-5,431,807	07-11-1995	Fréchet, et al.	
	AD	US-5,453,185	09-26-1995	Fréchet, et al.	
	AE	US-5,522,994	06-24-1996	Fréchet, et al.	
	AF	US-5,547,575	08-20-1996	Demmer, et al.	
	AG	US-5,633,290	01-14-1997	Fréchet, et al.	
	AH	US-5,728,457	03-17-1998	Fréchet, et al.	
	AI	US-5,744,250	04-28-1998	Lee, et al.	
	AJ	US-5,929,214	07-27-1999	Fréchet, et al.	
	AK	US-6,013,855	01-11-2000	McPherson, et al.	
	AL	US-6,306,273	10-23-2001	Wainwright, et al.	
	AM	US-6,358,557	03-19-2002	Wang, et al.	
	AN	US-6,361,958	05-07-2002	Shieh, et al.	
	AO	US-6,384,100	05-07-2002	Choi, Wai Ming	
	AP	US-5,786,428	07-28-1998	Arnold, et al.	
/JN/	CI	US-20010007701	07-12-2001	Karger, et al.	

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
/JN/	AQ	ALLMER K, Hult A, Ranby B., Surface modification of polymers. II: Grafting with glycidyl acrylate and the reactions of the grafted surface with amines. <i>J. Polym Sci Polym Chem</i> 1989; 27:1641-52.	
/JN/	AR	ALLMER K, Hult A, Ranby B., Surface modification of polymers. III: Grafting of Stabilizers onto Polymer Films. <i>J. Polym Sci Polym Chem</i> 1989; 27:3405-13.	
/JN/	AS	ANG CH, Garnett JL, Levot RG, Long Ma. The effect of additives for accelerating radiation grafting. The use of the technique for modification of polymers especially polyolefins. In: Carraher Jr CE, Moore JA, editors. <i>Modification of polymers</i> . New York: Plenum Press, 1983. p. 33-53.	
/JN/	AT	AUROUX P.A., Iossifidis D., Reyes D.R., Manz A., "Micro Total Analysis Systems. 2. Analytical Standard Operations and Applications," <i>Anal. Chem.</i> 2002, 74, 2637.	
/JN/	AU	BARKER S. L. R., Tarlov MJ, Canavan H, Hickman JJ, and Locascio LE, "Plastic Microfluidic Devices Modified with Polyelectrolyte Multilayers", <i>Anal. Chem.</i> ; 2000; 72(20) pp 4899 – 4903.	

Examiner Signature	/Jyoti Nagpaul/	Date Considered	03/28/2007
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Sheet 2 of 4**Complete If Known**

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/JN/	AV	BERMAN, et al., "Total Alignment of Calcite at Acidic Polydiacetylene Films: Cooperativity at the Organic-Inorganic Interface," <i>Science</i> , Volume 269, pp. 515-518, (July 28, 1995)	
	AW	CHAN C.M., Ko T.M., Hiraoka H., "Polymer Surface modification by plasmas and photons," <i>Surf. Sci. Rep.</i> 1996, 24, 3.	
	AX	CHEN, W. And McCarthy, T.J., "Layer-by-Layer Deposition: A Tool for Polymer Surface Modification," <i>Macromolecules</i> 1997, 30, 78-88, January 13, 1997.	
	AY	CHIARI M, Cretich M, Stastna M, Radko SP, Chrambach A; "Rapid capillary coating by epoxy-poly-(dimethylacrylamide): Performance in capillary zone electrophoresis of protein and polystyrene carboxylate," <i>Electrophoresis</i> 2001;22(4):656-9	
	AZ	ECKERT AW, Grobe D, Rothe U., Surface-modification of polystyrene-microtitre plates via grafting of glycidylmethacrylate and coating of poly-glycidylmethacrylate, <i>Biomaterials</i> . 2000 Mar;21(5):441-7.	
	BA	HENRY A.C., Tutt T.J., Galloway M., Davidson Y.Y., McWhorter C.S., Soper S.A., McCarley R.L., "Surface Modification of Poly(methyl methacrylate) Used in the Fabrication of Microanalytical Devices," <i>Anal. Chem.</i> Nov 1, 2000, 72, 5331.	
	BB	HU, S. et al., "Surface Modification of Poly(dimethylsiloxane) Microfluidic Devices by Ultraviolet Polymer Grafting," <i>Anal. Chem.</i> , 74, 4117-4123, June 6, 2002.	
	BC	KAMATH KR, Park K., "Surface modification of polymeric biomaterials by albumin grafting using h-irradiation," <i>J Appl Biomater.</i> 1994 Summer;5(2):163-73.	
	BD	KATO, K., Uchida, E., Kang, E. T., Uyama, Y., & Ikada, Y. "Polymer surface with graft chains," <i>Progress in Polymer Science</i> , 28(2): 209-259, 2003	
	BE	LISTON E., Martinu L., Wertheimer M., "Plasma Surface Modification of polymers for improved adhesion: a critical review," <i>J. Adhes. Sci. Technol.</i> 1993, 7, 1091.	
	BF	MA Z, Gao C, Shen J, "Surface modification of poly-L-lactic acid (PLLA) membrane by grafting acrylamide: an effective way to improve cytocompatibility for chondrocytes," <i>J Biomater Sci Polym Ed.</i> 2003;14(1):13-25.	
	BG	MEYER, U., Svec, F., and Fréchet, JMJ, "Use of Stable Free Radicals for the Sequential Preparation and Surface Grafting of Functionalized Macroporous Monoliths," <i>Macromolecules</i> 2000, 33, 7769-7775, Sept 28, 2000.	
	BH	NAKAYAMA Y, Matsuda T, Irie M., "A novel surface photo-graft polymerization method for fabricated devices," <i>ASAIO J.</i> 1993 Jul-Sep;39(3):M542-4.	
/JN/	BI	OSTER G., Shibata O., "Graft Copolymer of Polyacrylamide and Natural Rubber Produced by Means of Ultraviolet Light," <i>J. Polym. Sci.</i> 1957, 26, 233-234.	

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Sheet

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/JN/	BJ	PETERS, EC, Svec, F, and Fréchet JMJ, "Control of Porous Properties and Surface Chemistry in "Molded" Porous Polymer Monoliths Prepared by Polymerization in the Presence of TEMPO," <i>Macromolecules</i> 1999, 32, 6377-6379, Aug 19, 1999.	
	BK	PETERSON, H., et al., "Poly(ethylenimine-co-L-lactamide-co-succinamide): A Biodegradable Polyethylenimine Derivative with an Advantageous pH-Dependent Hydrolytic Degradation for Gene Delivery," <i>Bioconjugate Chem.</i> 2002, 13, 812-821, 06/01/2002.	
	BL	QIN D., Xia Y.N., Rogers J.A., Jackman R.J., Zhao X.M., Whitesides G.M., "Microfabrication, Microstructures and Microsystems," <i>Top. Curr. Chem.</i> 1998, 194, 1-20.	
	BM	RÅNBY B., "Surface Modification of Polymers by Photoinitiated Graft Polymerization," <i>Makromol. Chem., Macromol. Symp.</i> 1992,63, 55.	
	BN	RÅNBY B., Yang W.T., Tretinnikov O., "Surface photografting of polymer fibers, films and sheets," <i>Nucl. Instrum. Methods Phys. Res., Sect. B</i> 1999,151, 301-305.	
	BO	REYES D.R., Iossifidis D., Auroux P.A., Manz A., "Micro Total Analysis Systems. 1. Introduction, Theory, and Technology," <i>Anal. Chem.</i> 2002, 74, 2623.	
	BP	ROHR T., Yu C., Davey M.H., Svec F., Fréchet J.M.J., "Porous polymer monoliths: Simple and efficient mixers prepared by direct polymerization in the channels of microfluidic chips," <i>Electrophoresis</i> 2001, 22, 3959.	
	BQ	SHIN DS, Lee KN, Jang KH, Kim JK, Chung WJ, Kim YK and Lee YS, "Protein patterning by maskless photolithography on hydrophilic polymer-grafted surface," <i>Biosensors and Bioelectronics</i> , Volume 19, Issue 5, 30 December 2003, Pages 485-494	
	BS	SCHWEITZ, L, Andersson, L.I., and Nilsson, S., "Rapid electrochromatographic enantiomer separations on short molecularly imprinted polymer monoliths," <i>Analytica Chimica Acta</i> 435 (2001) 43-47.	
	BT	STACHOWIAK TB, Rohr T, Hilder EF, Peterson DS, Yi M, Svec F, Fréchet JM, "Fabrication of porous polymer monoliths covalently attached to the walls of channels in plastic microdevices," <i>Electrophoresis</i> . 2003 Nov;24(21):3689-93.	
	BU	SVEC, F.; Fréchet, J. M. J., "Continuous Rods of Macroporous Polymer as High Performance Liquid Chromatography Separation Media," <i>Anal. Chem.</i> 1992, 54, 820.	
	BV	SVEC, F.; Fréchet, J. M. J., "New Designs of Macroporous Polymers and Supports: From Separation to Biocatalysis," <i>Science</i> 1996, 273, 205	
✓	BW	SVEC F., Yu C., Rohr T., Fréchet J.M.J., in <i>Micro Total Analysis Systems 2001</i> , Ramsey J.M., van den Berg A. (Eds.), Kluwer Acad. Publ., Dordrecht, 2001, p. 643-645.	
/JN/	BX	SVEC F., Fréchet J.M.J., Hilder E.F., Peterson D.S., Rohr T., in <i>Micro Total Analysis Systems 2002</i> , Baba Y., van den Berg A. (Eds.), Kluwer Academic Publishers, Dordrecht, 2002, p. 332-334.	

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/JN/	BY	THROCKMORTON DJ, Sheppard TJ, and Singh AK, "Electrochromatography in Microchips: Reversed-Phase Separation of Peptides and Amino Acids Using Photopatterned Rigid Polymer Monoliths," <i>Anal. Chem.</i> ; Feb 15, 2002; 74(4) pp 784 – 789.	
	BZ	UYAMA, Y., Kato K., Ikada Y., "Surface Modification of Polymers by Grafting," <i>Adv. Polym. Sci.</i> 1998, 137, 1.	
	CA	VIKLUND, C.; Ponten, E.; Glad, B.; Irgum, K.; Horstedt, P.; Svec, F.; "Molded" Macroporous Poly(glycidyl methacrylate-co-trimethylolpropane trimethacrylate) Materials with Fine Controlled Porous Properties: Preparation of Monoliths Using Photoinitiated Polymerization," <i>Chem. Mater.</i> ; (Article); Feb 1997; 9(2); 463-471.	
	CB	VIKLUND, C.; Svec F, Fréchet J. M. J., and Irgum K, "Fast Ion-Exchange HPLC of Proteins Using Porous Poly(glycidyl methacrylate-co-ethylene dimethacrylate) Monoliths Grafted with Poly(2-acrylamido-2-methyl-1-propanesulfonic acid)," <i>Biotechnol. Prog.</i> ; 1997; 13(5) pp 597 – 600.	
	CC	VIKLUND, C and Irgum, K., "Synthesis of Porous Zwitterionic Sulfobetaine Monoliths and Characterization of Their Interaction with Proteins," <i>Macromolecules</i> , 33, 2539-2544, March 11, 2000.	
	CD	WANG B, Abdulali-Kanji Z, Dodwell E, Horton JH, Oleschuk RD, "Surface characterization using chemical force microscopy and the flow performance of modified polydimethylsiloxane for microfluidic device applications," <i>Electrophoresis</i> , Volume 24, Issue 9, 2003, p 1442-1450.	
	CE	XIE S, Svec F, Fréchet JM., "Design of reactive porous polymer supports for high throughput bioreactors: poly(2-vinyl-4,4-dimethylazlactone-co-acrylamide-co-ethylene dimethacrylate) monoliths," <i>Biotechnol Bioeng.</i> 1999 Jan 5; 62(1):30-5.	
	CF	YU C., Svec F., Fréchet J.M.J., "Toward stationary phases for chromatography on a microchip: Molded porous polymer monoliths prepared in capillaries by photoinitiated in situ polymerization as separation media for electrochromatography," <i>Electrophoresis</i> 2000, 21, 120.	
↓	CG	YU C., Davey M.H., Svec F., Fréchet J.M.J., "Monolithic Porous Polymer for On-Chip Solid-Phase Extraction and Preconcentration Prepared by Photoinitiated in Situ Polymerization within a Microfluidic Device," <i>Anal. Chem.</i> 2001, 73, 5088.	
/JN/	CH	YU C., Xu M., Svec F., Fréchet J.M.J. "Preparation of monolithic polymers with controlled porous properties for microfluidic chip applications using photoinitiated free-radical polymerization," <i>J. Polym. Sci., Polym. Chem.</i> 2002, 40, 755.	

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